PATENT CLAIMS

1. Cutting device, comprising a machine frame (10), an anvil roller (70) mounted for rotation on the machine frame (10) and a cutting tool (80; 264) mounted for rotation on the machine frame (10), wherein the cutting tool (80; 264) has a cutting edge (92) cooperating with anvil surfaces (76) of the anvil roller (70), characterized in that the cutting tool (80; 264) is biased essentially parallel to its axis of rotation (84).

2. Cutting device as defined in claim 1, characterized in that the cutting tool (80; 264) is subject to a tensile load.

3. Cutting device as defined in claim 1 or 2, characterized in that the cutting tool (80; 264) is braced with such a force that a maximum oscillation amplitude of the cutting tool (80; 264) is below a predetermined value.

4. Cutting device as defined in any one of the preceding claims, characterized in that the cutting tool (80) has an outer sleeve (208), the cutting edge (92) being seated on said outer sleeve, and an inner section (202), wherein outer sleeve (208) and inner section (202) are braced against one another with a tensional force acting essentially parallel to the axis of rotation (84) of the cutting tool (80).

5. Cutting device as defined in claim 4, characterized in that inner section (202) and outer sleeve (208) are braced such that the inner section (202) is subject to a tensile load in the direction of the outer sleeve (208).

6. Cutting device as defined in claim 4 or 5, characterized in that inner section (202) and outer sleeve (208) are braced such that pressure forces on the cutting tool (80) are adapted to be overcompensated by means of the tensile stress on the inner section (202).

7. Cutting device as defined in any one of claims 4 to 6, characterized in that outer sleeve (208) and inner section (202) are braced by means of form-locking connections (220).

8. Cutting device as defined in claim 7, characterized in that a connection direction (222) of a form-locking connection (220) is oriented parallel to the axis of rotation (84) of the cutting tool (80).

9. Cutting device as defined in any one of claims 4 to 8, characterized in that a plurality of form-locking connections (220) are arranged around the axis of rotation (84) uniformly in relation to it.

10. Cutting device as defined in any one of claims 4 to 9, characterized in that a form-locking element (224) has a contact surface (228), a pressure being exertable on the outer sleeve (208) by means of said contact surface.

11. Cutting device as defined in claim 10, characterized in that a screw element is seated on a contact element provided with the contact

surface (228), a tensile force being exertable on the inner section (202) by means of said screw element.

12. Cutting device as defined in any one of claims 4 to 11, characterized in that the dimensions of a form-locking element (224) and/or the number of form-locking elements are adapted to the diameter and the span of the cutting tool (80).

13. Cutting device as defined in any one of the preceding claims, characterized in that the cutting tool (80; 264) is provided with supporting rings (100, 102), the cutting tool being supportable in relation to the anvil roller (70) and/or vice versa by means of said supporting rings.

14. Cutting device as defined in claim 13, characterized in that the diameter of a supporting ring surface (104, 106) is adjustable for each supporting ring (100, 102) due to radial expansion of the supporting ring (100, 102) in the range below an elastic expansion limit of its material by means of an expansion device (240, 250, 252).

15. Cutting device as defined in claim 13 or 14, characterized in that the diameter of a supporting ring (100, 102) is adjustable by means of a form-locking element (224), a tensile stress being exertable on an inner section (202) of the cutting tool (80) in relation to an outer sleeve (208) with said form-locking element.

16. Cutting device as defined in claim 13 or 14, characterized in that the cutting tool (80) is adapted to be biased independently of the expansion of the supporting rings (100, 102).

17. Cutting device as defined in claim 1 or 2, characterized in that a biasing device (262) for the cutting tool (264) is arranged on the machine frame (10), a tensile stress being exertable on oppositely located ends or end areas of the cutting tool (264) by means of said device.

18. Cutting tool rotatable about an axis of rotation and having a cutting edge (92) adapted to be brought into cooperation with anvil surfaces (76) of an anvil roller (70), characterized in that the cutting tool (80) is biased essentially parallel to its axis of rotation (84).

19. Cutting tool as defined in claim 18, characterized in that the cutting tool (80; 264) is subject to a tensile load.

20. Cutting tool as defined in claim 18 or 19, characterized in that the cutting tool (80; 264) is braced with such a force that a maximum oscillation amplitude of the cutting tool (80; 264) is below a predetermined value.

21. Cutting tool as defined in any one of claims 18 to 20, characterized in that the cutting tool (80) has an outer sleeve (208), the cutting edge (92) being seated on said outer sleeve, and has an inner section (202), wherein outer sleeve (208) and inner section (202) are braced against one another with a tensional force acting essentially parallel to the axis of rotation (84) of the cutting tool (80).

22. Cutting tool as defined in claim 21, characterized in that inner section (202) and outer sleeve (208) are biased such that the inner section (202) is subject to a tensile load in the direction of the outer sleeve (208).

23. Cutting tool as defined in claim 21 or 22, characterized in that inner section (202) and outer sleeve (208) are biased such that pressure forces on the cutting tool (80) are adapted to be overcompensated by means of the tensile stress on the inner section (202).

24. Cutting tool as defined in any one of claims 21 to 23, characterized in that outer sleeve (208) and inner section (202) are biased by means of form-locking connections (220).

25. Cutting tool as defined in claim 24, characterized in that a connection direction (222) of a form-locking connection (220) is oriented parallel to the axis of rotation (84) of the cutting tool (80).

26. Cutting tool as defined in any one of claims 21 to 25, characterized in that a plurality of form-locking connections (220) are arranged around the axis of rotation (84) uniformly in relation to it.

27. Cutting tool as defined in any one of claims 21 to 26, characterized in that a form-locking element (224) has a contact surface (228), a pressure force being exertable on the outer sleeve (208) by means of said surface.

28. Cutting device as defined in claim 27, characterized in that a screw element is seated on a contact element provided with the contact surface (228), a tensile force being exertable on the inner section (202) by means of said screw element.

29. Cutting tool as defined in any one of claims 21 to 28, characterized in that the dimensions of a form-locking element (224) and/or the

number of form-locking elements are adapted to the diameter and the span of the cutting tool (80).

30. Cutting tool as defined in any one of claims 18 to 29, characterized in that the cutting tool (80; 264) is provided with supporting rings (100, 102), the cutting tool being supportable in relation to the anvil roller (70) and/or vice versa by means of said rings.

31. Cutting tool as defined in claim 30, characterized in that the diameter of a supporting ring surface (104, 106) is adjustable for each supporting ring (100, 102) due to radial expansion of the supporting ring (100, 102) in the range below an elastic expansion limit of its material by means of an expansion device (240, 250, 252).

32. Cutting tool as defined in claim 30 or 31, characterized in that the diameter of a supporting ring (100, 102) is adjustable by means of a form-locking element (224), a tensile stress being exertable on an inner section (202) of the cutting tool (80) in relation to an outer sleeve (208) by means of said form-locking element.

33. Cutting tool as defined in claim 30 or 31, characterized in that the cutting tool (80) is adapted to be biased independently of the expansion of the supporting rings (100, 102).

34. Embossing device, comprising a machine frame, an anvil roller mounted for rotation on the machine frame and an embossing tool mounted for rotation on the machine frame, wherein the embossing tool has an embossing structure cooperating with anvil surfaces of the anvil roller, characterized in that the embossing tool is biased essentially parallel to its axis of rotation.

35. Embossing tool rotatable about an axis of rotation and having an embossing structure, characterized in that the embossing tool is biased essentially parallel to its axis of rotation.